## WOLDEMAR VON SCHRÖDER.

HEIDELBERG has had to mourn the loss in rapid succession of three of its most distinguished professors—Victor Meyer, Erwin Rohde and, on January 28 of this year, Woldemar von Schröder.

Schröder was born at Dorpat in 1850, where his father was director of the Gymnasium. On his mother's side he inherited a taste for literature and poetry, but on entering the University at Dorpat, in 1868, he devoted himself to the natural sciences, possibly influenced thereto by his uncle, von Schrenk (of St. Petersburg), who was celebrated for his journeys and researches in Siberia. At first he studied chiefly chemistry and physics under Karl Schmidt and Arthur von Oettingen, and trained himself under Lemberg to that high pitch of analytical skill which he manifested in all his later work. After a break in his studies, due to persistent pains in the head and trouble with his eyes, he again returned to work; now, however, turning his attention rather into a biological direction. In 1878 he left Dorpat with the degree of Master of Chemistry, and went to Leipzig, where he was at once attracted by the striking originality and personality of Karl Ludwig, and in his laboratory saw for the first time the perfection of physiological experimenting. But Schröder was one of the few who were not content to learn by merely assisting Ludwig in personally carrying out all the experiments, and he struck out into paths of his own. Skilled as a chemist, he soon became an expert operator, and succeeded for the first time in successfully extirpating the kidney in birds, and thus settling a most important question as to the seat of formation of uric acid. In 1879 he became assistant to Schmiedeberg in Strassburg, and here it was that he carried out the great research with which his name will for all time be connected in the annals of physiology. Very little was at that time known as to the mode and seat of formation of urea, and Schröder threw a flood of light into the darkness. Having by extirpation of the kidneys, and artificial circulation through the excised organs, proved that urea is not formed by them, he next carried on an artificial circulation of blood containing ammonium carbonate through the muscles, and found that in them also no synthetic formation of urea takes place. He now turned to the liver and, again making use of artificial circulation, proved without any possibility of doubt the power of this organ to actively synthetise urea from ammonium carbonate and from certain substances present in the blood from an animal in full digestion. This was a great work, for not only did it reveal clearly a striking instance of synthetic activity in the animal organism, and thus place our belief in the fundamental similarity of plants and animal protoplasm on a firm basis, but it fixed definitely one seat of formation of urea in the animal body. In recognition of this work he received the degree of Doctor from the Natural Science Faculty of Tübingen in 1882, and similarly, and in the same year, he was made a Doctor at Strassburg, where he became Privat-docent in 1883. For this he wrote his inaugural dissertation on the alkaloids of opium, and thus diverged into that branch of science, pharmacology, which was henceforth to be the business of his life. During the next few years his chief works were on the physiological action of caffeine and of theobromine as related to caffeine, while at the same time he converted theobromine into a more soluble and assimilable compound, making it thus available for medicinal purposes. In 1890 Schröder was called to Heidelberg as Professor of Pharmacology, and he it was who really founded the existing Pharmacological Institute, turning the older accommodation to the best account, utilising or enlarging every corner of it, and completely remodelling and organising the teaching. Here he worked until his death, stimulating his pupils by his personal example and collaboration, brightening their labours by his sympathetic and genial ways, and impressing on all the right spirit of scientific life.

## THE KEKULÉ MEMORIAL.

THE death of August Kekulé on February 13, 1897, terminated a career rich in scientific achievement. In him we have lost an investigator who has exerted a profound influence on the development of chemistry.

The theory of valency and of the linking of atoms, and our present views as to the structure of carbon compounds, have acquired their definite form and clearness by the labours of Kekulé. His theory of benzene derivatives, in particular, has given the most powerful impulse to investigation in the domain of pure chemistry; while no scientific theory has done more to promote the development of chemistry as a branch of industry. While Kekulé is eminent by his scientific achievements, he is not less so by reason of the effects produced by his teaching. The publication of his "Lehrbuch der Organischen Chemie" marked an epoch in the history of chemistry. This treatise has done more to familiarise chemists with modern views than any other work of the kind.

The greater number of German professors of chemistry, and many of those in other countries, have either studied under Kekulé or under those who were his pupils: and gratitude calls for the erection of some permanent memorial of his striking personality.

Such a memorial would be a statue in bronze of the founder of structural chemistry, which would be fitly placed in front of the Chemical Institute at Bonn—in the place where for thirty years he lived and taught and worked.

All friends, admirers and pupils of Kekulé are accordingly invited to contribute to this object. Subscriptions, which will be forwarded to the Central Committee at Bonn, will be received by Dr. Hugo Müller, 13 Park Square East, Regent's Park, N.W.

JAMES DEWAR. HUGO MÜLLER.
G. CAREY FOSTER. FRANCIS R. JAPP.
T. E. THORPE. RAPHAEL MELDOLA.

## NOTES.

ACTING under the rule which empowers the annual election by the Committee of nine persons "of distinguished eminence in science, literature, the arts, or for public services," the Committee have just elected Viscount Dillon (president of the Society of Antiquaries), Mr. R. T. Glazebrook, F.R.S., and Sir George Scott Robertson into the Club.

THE meeting for the discussion of the scientific advantages of an Antarctic expedition takes place at the Royal Society this afternoon. We purpose giving a full account of the meeting in next week's NATURE, accompanied by a map showing all known land south of latitude 45° S., with drift and pack ice limits, so far as known, and the positions and dates of the highest latitudes reached.

THE Berlin correspondent of the *Standard* reports that the German Antarctic Expedition Committee, which met at Leipzig on Saturday last, unanimously resolved, after a long discussion, to advocate the despatch of a ship towards the South Pole on or near the meridian of the island of Kerguelen. Oceanic, geodetic, and biological researches are to be made during the voyage, and, if possible, the expedition will winter in the Antarctic zone. In that case geological observations are to be made at a fixed station, and exploring journeys on the inland ice and to the unknown west coast of Victoria Land, discovered by Sir James Clark Ross, will be undertaken in the spring. The return of the expedition, which will last two years in all, and will make observations on the home voyage as well as on the way out, will take place in the southern autumn. Dr. Erich von Drygalski, well known as an explorer of Greenland, was appointed the scientific head of the expedition.

Lord Lister is suffering from a severe cold, and was prevented by it from occupying the chair at Dr. Nansen's lecture on Monday.

We are glad to see the announcement that Sir Richard Quain's strength has so far improved that no further official bulletins will be issued.

The Pasteur Institute at Paris has received a donation of 1600*l.* from Mme. E. Durand, for the purpose of carrying on investigations on tuberculosis.

The personal estate of the late Mr. J. W. Zambra, formerly of the firm of Negretti and Zambra, the well-known philosophical instrument makers, has been valued at 176,075*l.*

The fifth International Congress of Hydrology, Climatology, and Geology will be held at Liége this year, from September 25 to October 1, under the patronage of His Royal Highness Prince Albert of Belgium.

The Physical Society of Frankfort-on-Main propose to erect a monument to Philipp Reis, the inventor of the telephone, and have appointed a committee to obtain subscriptions for this purpose. The estimated cost of the memorial is 1500*l.*

The fourteenth International Horticultural Exhibition is to be held at Ghent from April 16 to April 24 next. This exhibition, which takes place every five years, is organised and managed by the Royal Society of Agriculture and Botany at Ghent. It is under the patronage of the King and Queen of Belgium, and is subsidised by the national, provincial, and municipal Governments.

H.R.H. the Prince of Wales has consented to open the International Photographic Exhibition at the Crystal Palace on Monday, April 25, and not Wednesday, April 27, as originally announced. The latest date for the reception of exhibits in each section will therefore be two days earlier than that first stated on the prospectus.

At the meeting of the Physical Society of London, to be held at Eton College on Saturday, February 26, the Rev. T. C. Porter will exhibit and describe several interesting experiments. The subjects with which he will deal are: (1) a new theory of geysers; (2) a new method of viewing Newton's rings; (3) experiments bearing on the sensation of light; (4) a method of viewing lantern projections in stereoscopic relief; (5) winter observations on the shadow of El Teide, with a new method for measuring approximately the diameter of the earth; (6) temperature of the water of Niagara.

The death of M. Gauthier-Villars was referred to, with expressions of regret, at the meeting of the Paris Academy of Sciences on February 7. Since 1835 the *Comptes rendus* of the Academy have been printed by the firm of Gauthier-Villars, and, in spite of the large quantity of matter on a variety of subjects, and the idosyncrasies of authors, the hour of publication has never been delayed. The firm has published for many years the publications of the Bureau des Longitudes, those of the Paris Observatory, and of the Bureau Central météorologique. M. Gauthier-Villars also assisted the French Government and the Academy in the publication of the complete works of Lagrange, Fermat, Fourier and Cauchy, and his name is associated with many other scientific enterprises.

The anniversary meeting of the Geological Society was held on Friday last. Mr. W. Whitaker, F.R.S., was elected president in succession to Dr. H. Hicks, F.R.S., whose presidential address appears in another part of the present issue. The new vice-presidents elected are Prof. J. W. Judd, C.B., F.R.S., and the Rev. H. H. Winwood. Prof. W. W. Watts has succeeded Mr. J. E. Marr, F.R.S., as secretary, the other secretary being Mr. R. S. Herries. To the list of members of Council were added the names of Dr. G. J. Hinde, F.R.S., Mr. W. H. Hudleston, F.R.S., Prof. H. G. Seeley, F.R.S., Prof. W. J. Sollas, F.R.S., and Mr. A. S. Woodward. The medals and prize-funds were awarded to the geologists whose names have already been announced (p. 252).

Surgeon-Major Black, Edinburgh, has received a letter from Mr. C. L. Wragge, dated Sydney, January 7, referring to a new high-level meteorological station. In the course of the letter Mr. Wragge says:—"You will be pleased to know that I have quite successfully established a mountain experimental observatory on the summit of Mount Kosciusko 7328 feet above sea-level, and the highest point in all Australia; also a sea-level station on the south-east coast adjacent at Merimbula, where simultaneous observations are taken. The hours are midnight, 4 a.m. and 8 a.m.; noon, 4 p.m. and 8 p.m.; also half-hourly from 8.30 a.m. to 11.30 a.m. inclusive. Simultaneous readings are also taken at a new station in Sydney, at Sale in Victoria, and at Hobart, and on Mount Wellington, Tasmania."

The meeting, held in the rooms of the Manchester Literary and Philosophical Society on February 16, to consider what should be done to assist in making the forthcoming Congress of Zoology a success, was well attended by representatives of various natural history and scientific societies in the centre and north of England. Mr. J. Cosmo Melvill presided. Prof. S. J. Hickson explained to the meeting the objects of the International Congress of Zoology and the probable programme of the week in August at Cambridge. The following resolution was then proposed by Mr. Masefield, president of the Conchological Society, and carried unanimously:—"That this meeting of persons resident in the centre and north of England, and interested in zoological progress, offers its most cordial support to the Committee now organising the fourth meeting of the International Congress of Zoology, to be held in Cambridge in the last week of August, and expresses a sincere hope that all societies instituted for the study of zoology and kindred subjects will contribute in accordance with their means to the funds of the Congress, and appoint one or more representatives from their members to attend the Congress." The delegates at the meeting were enthusiastic about the Congress, and their cordial co-operation will encourage as well as assist directly the work of the Executive Committee.

At its annual meeting on February 2, the Russian Geographical Society awarded a special Constantine medal to Dr. Nansen; a Constantine medal to V. I. Robcrovsky, for his journeys in Central Asia; the Count Lütke's medal to I. I. Strelbitzky, for his journeys in Persia and Manchuria in 1891–96; the new Semenoff's medal to Dr. Sven Hedin, for his three years' journeys in Central Asia. A large gold medal of the Society was awarded to I. K. Zhdanoff, for his ethnographical works, and especially for his work on "Russian Epical Poetry"; and small gold medals to Th. Witram, for pendulum measurements in the Far East; to F. Sperck, for his large work on the climate of the Astrakhan region; to S. Rybakoff, for the collection of specimens of musical texts of songs amongst the Ural natives; and to S. Gulishambaroff, for his work "The World's Trade in the Nineteenth Century and Russia's Part in it." Silver medals were awarded to MM. Pastukhoff, for his ascension of the Elbrus; Abels, for hypsometrical measurements in the Urals;

B. A. Fedchenko, for a communication on the Talas Alatau; Timonoff, for a paper on the water-communications on the tributaries of the Amur; Sapozhnikoff, for work on the glaciers of the Altai; Kovanko and Semkovskiy, for the organisation of international balloon ascensions in which the Society took a part; and to Prince Obolensky, Tomilovskiy and Utyesheff, for their daily observations upon the motion of the clouds.

Mr. Leonhard Stejneger, of the U.S. National Museum, paid another visit to the Russian Fur-seal Islands (Commander Islands) in the Northern Pacific, last year, by order of the U.S. Government, and has just issued his report (Treasury Department, Document No. 1997). The examination of the "Rookeries" was made mostly in company with one of the British Commissioners, Mr. Barrett-Hamilton, and appears to have been a work of some difficulty and danger, owing to the wild weather generally prevalent, and the utter absence of means of communication. Mr. Stejneger's general conclusions demonstrate "a very great decrease in the breeding females" of the Fur-seals since 1895, when he made his last official report (U.S. Fish-Commission, *Bulletin* for 1896, Article 1). He also alleges "great mortality in the pups, due to starvation." He comes finally to the conclusion that a *zapuska*, or total prohibition of killing seals on land for a period of years (which he formerly advocated), would be rather an injury than a help to the seal-herds, as it would "increase the number of superfluous bulls."

Since he succeeded Sir Harry Johnston as Commissioner and Consul-General of Nyasaland, Mr. Alfred Sharpe has not ceased in the good work carried on so long by his former chief, of collecting and sending home examples of the fauna and flora of that Protectorate. Mr. Sharpe is now on his way home on leave, much impaired in health, we regret to say, from his long stay in the tropics, but brings more collections with him. A memoir, by Mr. Thomas, on the mammals procured by Mr. Sharpe, will appear in the next part of the Zoological Society's *Proceedings*, and Captain Shelley is at work on the birds obtained by this energetic administrator.

The colonial report on "Cocos-keeling and Christmas Islands," 1897 (c.-8650-14) contains a few useful natural history and other notes. A small brilliant red crab is frequently seen up the hills, running in and out of holes or from under stones. Once a year, in the month of December or January, the male and female travel down to the sea margin, where the female deposits her eggs, and the parents again return. They take fifteen days going and fifteen days returning, and travel in bodies like ants. After the eggs are hatched, the young, when big enough, move up the hill. Darwin doubted whether the crab climbed trees; but it is now a well-ascertained fact, though the purpose is still unknown. Both Mr. Forbes and the reports of H.M.S. *Challenger* describe the white tern or noddy as a beautiful bird with black eyes; but no mention is made of the beautiful purple-blue of the beak up to the nostril, the feet and the tarsus. This is probably due to the fact that two or three hours after the birds are shot the colour of the beak and feet die away. A short description of three native dances is also given.

Prof. J. C. Ewart, F.R.S., contributes to the *Zoologist* an illustrated article upon zebra-horse hybrids. His experiments prove that it is a comparatively simple matter to cross various breeds of mares with a Burchell Zebra, and, if experts are to be trusted, the hybrids promise to be as useful and hardy as they are shapely and attractive. The preliminary difficulties having been overcome, Prof. Ewart points out that it remains for those in authority to take such steps as may be necessary to ascertain of what special use, if any, zebra hybrids may be in the various parts of the Empire, but more especially in Africa and India.

A snowstorm of considerable severity occurred over the south-western districts of England during Monday night, the snow gathering to a considerable depth in places, and causing much inconvenience and delay to ordinary traffic. In parts of Devon, Somerset and Dorset, the drifts were several feet deep. At Hurst Castle, Hants, a reporting station of the Meteorological Office, the melted snow and sleet measured 1·6 inches of water. Thunder and lightning were also experienced during the storm. This disturbed weather was occasioned by the arrival of a shallow cyclonic area over the south-western portion of our islands, which lingered in those parts during Monday and Tuesday.

The U.S. *Monthly Weather Review* for November last contains an account of the celebration of the fiftieth anniversary of the establishment of the Royal Meteorological Institute in Berlin, on October 16, 1897. The jubilee festivities were divided into three parts: an address in the Memorial Hall of the Royal Geodetic Institute, an inspection of the magnetic and meteorological observatories of the Institute, and a banquet. The high recognition given in Germany to meteorological science was evidenced by the presence of the Emperor and Empress, who were accompanied by a brilliant retinue, and listened to the address of Dr. v. Bezold, the Director, who sketched the activity of the institution during the whole period of its existence. At the present time the organisation consists of 188 stations for regular observations, 1336 thunderstorm stations, and 1844 rainfall stations. Various experimental investigations are conducted at the Potsdam Observatory, and, owing to the generosity of the Emperor, scientific balloon ascents on a large scale are occasionally made for the study of the physics of the upper air. At the close of the address, the Minister of Education announced certain decorations to be given in connection with the celebration. The great gold medal in science was presented to Dr. v. Bezold, and Orders of the Crown or of the Red Eagle were presented to Dr. Hellmann, Dr. Sprung, Dr. Vogel, and to Herr Treitschke, proprietor of the observatory on the Inselsberg, near Erfurt, and to various other scientific men. Numerous addresses and telegrams of congratulation were received from all parts, including one from the Grand Duke Constantine, on the part of the Imperial Russian Academy of Sciences.

In his "Twelfth and Concluding Memoir on the Theory of Screws," published in the *Transactions of the Royal Irish Academy*, Sir Robert Ball completes the solution of a problem which has for the past five-and-twenty years been associated with his name. A feature of his paper is the series of summaries of this and the eleven preceding memoirs, and we feel that we can do no better than quote in his own words Sir Robert Ball's summary of his latest investigation: "At last I succeeded in accomplishing what I had attempted from the first. I could not develop the complete theory, which I felt certain must exist, until I had obtained a geometrical method for finding the instantaneous screw from the impulsive screw. When this was accomplished in the midsummer of 1897, the geometrical theory in Dynamics, which I had striven for a quarter of a century to obtain, was at last manifest. How my difficulties were overcome has been set forth in this Memoir. There are, no doubt, many other questions that would repay investigation at almost every stage of the subject. But the problem which I had proposed to myself so many years ago, and which I have steadily kept in view ever since, having been at last resolved, I have felt that this series of papers should cease."

Mr. E. Charles Horrell, writing in the *Journal of Botany* for February, invites the co-operation of bryologists in working out the comital distribution of British mosses in the way that the distribution of flowering plants was done by Watson. With the object of eing how far the lists of mosses already published would enable him to compile a census of the 112 Watsonian vice-counties, the writer has looked through most of the magazines, county floras, proceedings of local natural history societies, the Botanical Record Club's Reports, &c., in the library of the British Museum, and he finds that fairly good lists have been published for about fifty vice-counties; there are, therefore, about sixty-two vice-counties in Great Britain for which he can find no lists of the commoner mosses. Mr. Horrell has already received lists or offers of assistance from correspondents in about thirty-four vice-counties, but would much like to find a moss student in each vice-county who would undertake to prepare a list of his district during the next two or three years. Mr. H. N. Dixon and Mr. E. M. Holmes have offered their aid in examining doubtful or critical species. Mr. Horrell's address is 44 Brompton Square, London, S.W.

IN a contribution to the *Transactions* of the Nova Scotia Institute of Science, ix., Mr. E. H. Archibald describes a series of determinations, made at Dalhousie College, of the conductivity of aqueous solutions containing potassium and sodium sulphates. The object was to ascertain if the conductivity was calculable in the case of mixtures of these solutions from the formulæ given by the dissociation theory of Arrhenius and others. It would appear that for mixtures of solutions of these salts, not more concentrated than 0·8 equivalent gramme-molecules per litre, it is possible by the aid of the dissociation theory to compute the conductivity within, or but little beyond, the limits of the error of observation. For more concentrated solutions the differences between the calculated and observed conductivities ranged up to 1·47 per cent.; but this discrepancy seems attributable, in part at least, to certain asssumptions regarding the ionisation-coefficients, which could not be regarded as rigorously correct, except at infinite dilution.

MESSRS. MACMILLAN AND CO. will publish in a few days the first volume of a comprehensive treatise on "Magnetism and Electricity," by Prof. Andrew Gray, F.R.S. In this work an attempt has been made to present the subject from the beginning from the point of view of action in a medium, and to bring the experimental and theoretical results described as far as possible down to date. The present volume, though it takes for granted a knowledge of some of the most elementary phenomena and apparatus, aims at giving an account of experimental work as well as of the related magnetic or electric theory. It includes the ordinary phenomena of magnetism and their theory, a discussion of electrostatics and of steady flow of electricity, of electromagnetism and of the electromagnetic theory of light. The treatment is as far as possible dynamical, and to facilitate reference to dynamical theorems, a chapter on general dynamics has been included in this first volume. In Volume ii. will be given, among other matters, an account of experimental work on magnetism, of recent work on Hertzian, Röntgen, and other radiations, and of general dynamical theories of electromagnetic action, a continuation of the discussion of the voltaic cell begun in Volume i., and a chapter on electrolysis.

THE Mexican Scientific Society, which is called "Antonio Alzate," is doing excellent work, to judge from the recent numbers of its *Memorias* which have reached us. Among other papers we find seismic observations at Orizaba, by M. C. Mottl; physico-chemical studies on the fat of the Yoyote shrub (*Thevetia yecotli*), by Prof. Villaseñor; on the decimalisation of the circle and of time, by M. J. de Mendizábal-Tamborrel; on the concentration of auriferous and argentiferous minerals, by T. L. Laguerenne; on the augmentation of weight of tuberculous and anæmic patients in rarefied air, by Dr. D. Vergara Lope; studies on the transpiration of Mexican plants, by Prof. L. G. Seurat; on the syrup of iodide of iron, by Prof. F. Solórzano; on orogenic movements, by M. P. C. Sánchez; on the temperature of plants, by MM. Moreno and Anda; measurement of the tension of the blood of the dog, by Dr. D. Vergara Lope; and formulæ for the velocities and pressures in guns, by M. F. Angeles; as well as reviews of books, &c. The Society, besides publishing these *Memorias* in a convenient size for binding up with the majority of octavo scientific papers, has adopted the excellent plan of beginning each paper on a right-hand page; any specialist can thus bind up separate papers on selected subjects without impairing the rest.

A RECENT number of the *Cape of Good Hope Agricultural Journal* contains an article on "The serum method of treating cattle as a preventive of rinderpest in South Africa," in which the joint report of the French experts and the Government Veterinarian is given *in extenso.* It contains rules for the application of the method of treating cattle by the injection of protecting blood, and attention is called to the importance of procuring the blood from animals which have suffered from rinderpest in its most severe form, and which have been "salted" or rendered immune to the disease one to five months previously, and have received at least one injection of rinderpest blood. It is urged that general measures should be taken throughout the whole of South Africa to prevent the spread of rinderpest, the protective measures already adopted by the Governments of the South African Republic, Orange Free State, and the Cape Colony have had some good effect, but it is feared that unless further and more vigorous steps are taken, the epidemic will conquer the whole of South Africa. If we consider that it was in the beginning of the year 1896 that rinderpest first made its appearance in Matabeleland and Mashonaland, and in less than eighteen months had destroyed all the cattle of these two countries, and had also overwhelmed the territory of the South African Republic and the Orange Free State, the necessity for united and strong action appears sufficiently imperative. It is at present, the report tells us, spreading from north to south, and from east to west, and seriously threatens the herds of the Cape Colony, Basutoland, Natal, and Zululand. As regards the subsequent use of the carcases of rinderpest animals, the consensus of opinion appears to deprecate as unsafe the practice of simply salting and drying rinderpest oxen hides, whilst it is also stated that the farmer cannot be trusted to convert fat into soap without risk of accidentally spreading the disease.

THE Kekulé Memorial Lecture, delivered before the Chemical Society on December 15 (see p. 180), by Prof. F. R. Japp, F.R.S., is published, with a portrait of Kekulé, in the February issue of the Society's *Journal.*

UNDER the title of "A Visit to Giessen; or, Thoughts on Liebig and Chemistry in Germany," Prof. Senier, of Queen's College, Galway, recently delivered a lecture. The lecture has now been published by Mr. Edward Ponsonby, Dublin, and it makes a very interesting pamphlet on Liebig and his work.

THE second part (for February 1898) of the monthly *Journal of Applied Microscopy*, published by the Bausch and Lomb Optical Company, Rochester, N.Y., contains a full account, with illustrations, of the very extensive and complete laboratories connected with Cornell University, viz. those for botany, microscopy, histology, embryology, bacteriology, and pathology.

THREE well-arranged catalogues of works on various branches of the mathematical and physical sciences have just been issued by Messrs. William Wesley and Son. The catalogues include works from the libraries of the Rev. A. Freeman, Dr. Albert Marth, and Dr. Hind. Rare and valuable memoirs and books are enumerated in the lists, and the scientific bibliophile who consults the catalogues will be repaid for his trouble.

THE results of meteorological observations made at Bangalore, Mysore, Hassan, and Chitaldrug, under the direction of Mr. J.

Cook, during 1896, has just been issued from the Mysore Government Central Press. In addition to meteorological statistics, the volume contains several plates, upon which the observations are represented graphically. The Report of the Meteorological Service of Canada for the year 1890 was also received a few days ago, together with a report on the observations made during 1895. Both of these reports are almost completely taken up with rows of figures referring to the meteorology of the Dominion.

THE Manchester Museum, Owens College, has just published, as a museum handbook, Parts ii. and iii. of a Catalogue of the Hadfield Collection of Shells from the Loyalty Islands. Since the first part of the catalogue was published, further consignments of shells have been received at the museum, the number of species recorded being thus increased from 630 to 860. The complete catalogue should be of considerable value to conchologists, as the collection of shells described in it is the largest and most important that has been received in this country from the Loyalty Islands.

THE first number of the thirty-second volume of the *American Naturalist* marks the issue of the magazine in a new and more attractive form. It is the purpose of the editors to make the periodical a means of encouraging the movement towards a closer union of the natural sciences. Superficial observations and poorly-grounded speculations are not to be published in its pages, but only articles and other contributions which have significance from various points of view. This ideal is a commendable one, and it remains for American naturalists to help the journal to attain it.

THE current number of the *Journal of the Royal Microscopical Society* (published bi-monthly on the third Wednesday in February, April, June, August, October and December) contains the tenth and concluding part of Mr. F. Chapman's very important account of the Foraminifera of the Gault of Folkstone. The greater part of the number is, as usual, occupied by the summary of recent researches in zoology, botany, and microscopy (structural and applied). The object aimed at is to give a brief abstract of every important paper (not purely systematic) in these departments of science, each section being under the care of a specialist sub-editor. The paragraphs on bacteriology are especially full and complete.

UNDER the title of the "Universal Lamp Time Chart," Mr. D. E. Benson, of Southport, is publishing an accurate and ingenious chart, constructed by Mr. G. Napier Clarke and himself, to show graphically the time at which cyclists must light up on any day of the month in any part of the British Isles. Separate charts are required for each month, and also for England and Wales, Scotland and Ireland; but though this will probably prevent the charts from being widely used, the idea of representing by a graphic construction the times for lighting and extinguishing lamps in different latitudes and longitudes in the British Isles is so good, that the authors deserve encouragement. Another publication in which those of our readers who ride cycles will be interested is "The Cyclist's Pocket Book" (Archibald Constable and Co.). The book contains a large amount of useful information and memoranda on the practice of cycling, and a few hints on the initial treatment of the commoner casualities to which cyclists are liable.

THE additions to the Zoological Society's Gardens during the past week include two Australian Sheldrakes (*Tadorna tadornoides*) from Australia, two Chinese Quails (*Coturnix chinensis*) from China, six Pintail (*Dafila acuta*), European, purchased; a Great Kangaroo (*Macropus giganteus*), an Australian Cassowary (*Casuarius australis*) from Australia, deposited.

## OUR ASTRONOMICAL COLUMN.

ASTRONOMICAL OCCURRENCES IN MARCH 1898:—

March 1. 8h. 49m. Jupiter's Sat. IV. in conjunction S. of planet.
2. 10h. 10m. to 12h. 33m. Jupiter's Sat. III. in transit.
2. 10h. 51m. to 12h. 33m. Jupiter with only one visible satellite.
2. 13h. 40m. to 14h. 36m. B.A.C. 2238 (mag. 6·5) occulted by the moon.
4. 7h. 10m. to 8h. 29m. $d^1$ Cancri (mag. 5·9) occulted by the moon.
4. 8h. 44m. Minimum of β Persei (Algol).
9. 11h. 12m. to 11h. 51m. *q* Virginis (mag. 5·7) occulted by the moon.
9. 13h. 29m. to 15h. 14m. Jupiter with only one visible satellite.
9. 13h. 29m. to 15h. 53m. Jupiter's Sat. III. in transit.
9. 14h. 12m. Jupiter's Sat. IV. in conjunction N. of planet.
13. 14h. 38m, to 15h. 49m. α Scorpii (Antares, mag. 1·1) occulted by the moon.
15. Illuminated portion of disc of Venus = 0·993.
,, ,, ,, Mars = 0·968.
16. 16h. 46m. Jupiter's Sat. III. begins transit.
16. 16h. 46m. to 16h. 58m. Jupiter with only one visible satellite.
20. Pons-Winnecke's comet due at perihelion.
21. Minor axis of Saturn's outer ring 17″·63.
24. 10h. 27m. Minimum of β Persei (Algol).
25. 12h. Jupiter in opposition to the sun.
Equatorial diameter = 44″·95.
Polar ,, = 42″13.
26. 2h. Mercury in conjunction with Venus. Mercury 1° 14′ N.
26. 9h. 24m. Near approach of 23 Tauri (mag. 4·2) to the moon.
27. 7h. 16m. Minimum of β Persei (Algol).
30. 11h. 13m. to 12h. 14m. δ Geminorum (mag. 3·7) occulted by the moon.

ANOTHER LUNAR HOAX?—From very early times the moon has frequently been selected as a suitable object upon which to exercise the imagination or base an elaborate hoax. We may remember that Hubert gravely declared to King John "that five moons were seen to-night: four fixed: and the fifth did whirl about the other four, in wondrous motion." Such rough descriptions were good enough for the times in which they were uttered; but in days of more exact knowledge, the lunar fable must be prepared with greater elaboration and decked in a more scientific garb. When this century was young, a tale obtained some credence, because it was artistically disguised, concerning what astronomers could see on the moon's surface. It was reported that Sir David Brewster and Sir John Herschel had seen a lunar forest with trees resembling "the yews grown in English churchyards," and a "lunar ocean breaking in large white billows upon the strand, while the action of very high tides was quite manifest upon the face of the cliffs for more than a hundred miles." Now, at the end of the century, comes the latest lunar myth, and it necessarily must be surrounded with still greater nicety of detail, and clothed with an accurate terminology.

The author of the alleged discovery in this instance is Dr. Georg Waltemath, an astronomer of Hamburg, and his assertion is, that there is evidence of the existence of a second moon, circling about the earth, but with such low reflective power that it has usually escaped observation even when in opposition. The author has perceived the desirability of making this hypothetical moon do a useful work in celestial mechanics, by explaining that the difference between the observed and computed secular acceleration of the moon's mean motion arises from the action of the newly discovered body. Perhaps it might also, with a little art, be made to explain the motion of the perihelion of Mercury. A new comer who is able to remove some existing difficulties, is naturally more welcome than one who might introduce fresh disturbances. Therefore the mass must not be very great, and Dr. Waltemath assigns to the new body that he has discovered or deduced, a mass of 1/80 of that of the moon, and a diameter of 700 kilometres. The distance is pu